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Communications on observations made in the course of your studies are solicited; also exhibits of any specimens you consider of interest.

The printer of the "News" will furnish reprints of articles over and above the twenty-five given free as; the following rates: One or two pages, twenty-five copies, 35 cents; three or four pages, twenty-five copies, 70 cents; five to eight pages, twenty-five copies, $1.40; nine to twelve pages, twenty-five copies, $2.00; each half-tone plate, twenty-five copies, 30 cents; each plate of line cuts, twenty-five copies, 25 cents; greater numbers of copies will be at the corresponding multiples of these rates.

FRANK HAIMBACH.
1912.

ENTOMOLOGICAL NEWS

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Frank Haimbach.

(Portrait, Plate XXIV.)

Frank Haimbach died April 1, 1930, following a short illness. He was born in Philadelphia, July 2, 1859; his parents were of French and German extraction, and although both were born in Germany they came to America in their youth and settled in Philadelphia, becoming naturalized citizens.

His early education was somewhat limited, but he had inherited from his parents a love of cultural things, particularly Natural History and in his early days wandered with them through Fairmount Park and along the banks of the Schuylkill, where he would collect insects and plants, so that his interest in nature had manifested itself before he was six years old. His father was an intellectual man and wrote a great deal of poetry, some of which was published in Philadelphia in 1899 under the title of "Poetische Blätter". His mother sent to Germany for his first entomological books from which he learned to mount insects and make containers and cabinets for his collection.

His interest in nature study was lifelong. Circumstances never permitted him to travel, but his Sundays and the very little leisure he had was spent in collecting trips to the pine barrens in New Jersey and the many delightful suburbs of Philadelphia, along the Wissahickon Creek, Chester and Delaware Counties and the woods and fields of Roxborough.

He carried on an extensive correspondence with collectors all over the world, buying and exchanging specimens, and practically all of his leisure time was spent either in the fields collecting or in his study mounting and arranging the specimens, devoting most of his attention to the Lepidoptera and particularly the smaller moths.

He contributed valuable data to Dr. John B. Smith for his

list of the insects of New Jersey, and was a recognized authority on the Heterocera.

His beautiful collection of over 40,000 Lepidoptera he presented to the Academy of Natural Sciences, prior to his death.

For a number of years he acted as Secretary for the Feldman Collecting Social; he was a member of the American Entomological Society and was its Secretary and Treasurer at the time of his death. The last few years of his life were the culmination of an ambition he always had of devoting his entire time to Entomology; he became associated with Dr. J. R. Schramm on "Biological Abstracts" and spent the balance of his time in the Department of Entomology in the Academy of Natural Sciences of Philadelphia, during which time he wrote several valuable papers.

On March 27th, 1928 he was appointed Special Aide in this department in charge of the "Brackenridge Clemens Memorial" and was studying and arranging the large collection of Microlepidoptera at the time of his death.

A list of his Entomological Contributions follows:

1905. Desmia funeralis Hubner and variety subdivisalis Grote. ENT. NEWS. XVI, 121.
1907. Two new species of Crambus and a new variety of Haematopsis grataria Fabricius. ENT. NEWS. XVIII, 44-45.
List of the Lepidoptera of Five-Mile Beach, N. J. ENT. NEWS. XVIII, 217-228.
1908. New Pyralidae. ENT. NEWS. XIX, 263-264.
1915. New Heterocera. ENT. NEWS. XXVI, 321-325.
1928. A list of the species and descriptions of new forms of the American genus Zale, and a new form of Safia Trans. Am. Ent. Soc. LIV, 215-231.
1930. The Crambinae in the Brackenridge Clemens Memorial Collection of the Academy of Natural Sciences of Philadelphia ENT. NEWS. XLI, 113-134.
1905-1909. Secretary's reports of the meetings of the Feldman Collecting Social. ENT. NEWS. XVI-XX.
1930. Secretary's Report of meeting of the American Entomological Society. ENT. NEWS. XLI.
1930. The Seventieth Birthday of Dr. Adelbert Seitz. ENT. NEWS. XLI, 206-207.

Frank Haimbach was a kindly gentleman; he was always glad to assist other entomologists in their work or help amateurs in the technic of mounting, preparing, and classifying insects. Many of the prominent entomologists of his generation were his close friends, and they and the younger students of the subject were constant visitors at his home. He endeared himself to all of his scientific associates at the Academy and is particularly mourned by his friends in the Department of Entomology and his fellow members of the American Entomological Society.

He is survived by his wife, Ida, two daughters, Miss Minna and Mrs. Charlotte Lyons, and two sons, Frank, Jr., and Albert. Another son, Philip, died in 1901 at the age of eighteen years. His loss was a double one to his father as he, too, was interested in the same studies and a close companion in his entomological work.

ROSWELL C. WILLIAMS, JR.

MR. HAIMBACH AND HIS CONNECTION WITH THE GERMANTOWN ENTOMOLOGICAL CLUB, 1926-1930.

Mr. Haimbach was introduced to Eastburn Thompson by Mr. Henry W. Fowler, of the Academy, one day in Langhorne, and was invited to see Mr. Haimbach's collection. Easie told the Club all about it at our next meeting and we were all invited to go to Langhorne to see the collection.

So one wintry, snowy day the fathers of the Club members transported twenty ten- eleven- and twelve-year-olds to Langhorne. We were not only shown the collection but were presented with some delightful duplicates and had a chance to see a real entomological laboratory.

From that moment Mr. Haimbach showed the keenest interest in our Club, as he believed that it was essential to foster the interest of young entomologists. He came to our Club meetings, presenting scientific papers. He gave an exhibition of mounting of tiny butterflies and moths. He judged our mounting contests, and we spent many gloriously happy Sunday afternoons in his quaint, low-ceilinged study. He had the

enthusiasm of youth, and was as eager and excited as we were over any interesting specimen. He had untiring patience with our ignorance and never once did he make us feel other than his entomological peers. His kindliness of spirit, his accurate scientific knowledge, his skill and his old-world courtesy are part of the precious heritage of his friendship.

Our crowning adventure with him was his visit to our New Hampshire home last August. Easie, Jack Cadbury, Barbara and Stephen Cary and I will never forget those joyous days. We took him to the top of Mt. Washington in a car that boiled and sputtered; we caught *Brenthis montinus* in a sunny meadow near the top, and although it was too late for *Oeneis semidea*, Mr. Haimbach caught an *Anartia* or two and some other small moths that pleased him tremendously. We had a south east storm during his stay with delightfully foggy nights, so that our light-trap worked to perfection. We shall never forget him with his cyanide bottles and his net, bagging tiny creatures. He was up late and early, getting a five A. M. start so as to get his treasures off the white walls of the cottage before sunrise. I turned over the desk in the living room for his exclusive use while there, and when not collecting he pinned with exquisite precision his specimens in Schmitt boxes. He returned laden with treasures, leaving behind him the memory of happy days with a man great of heart, of boyish enthusiasm, and we all pronounced him our most delightful guest. Plans were all laid for his return this summer.

Ever since we have known him we have collected Microlepidoptera for him on all of our trips, and with his unfailing courtesy and generosity he credited all these things to me in the Academy collection and in its records.

Something very big has gone from our lives, but the Club has passed a resolution to the effect that in our feeble way we shall endeavor to carry on the work which he has laid down. This is the spirit which he would wish us to have, rather than mourning for his passing.

MARGARET M. CARY.

Another and more recent (1929) portrait of Mr. Haimbach appeared in the News for December, 1929, Plate XVII.—EDITOR.

ERNEST BAYLIS.
1928.

Ernest Baylis.

(Portrait, Plate XXV.)

ERNEST BAYLIS, Associate Editor of ENTOMOLOGICAL NEWS, passed away at one o'clock Sunday afternoon, July 6th, 1930, at South Sterling, Pennsylvania. He was in his 54th year. He was born at Ipswich, England on February 8th, 1877. At the age of fourteen, he developed an abiding interest in Natural Science and he collected insects generally at that time, but chiefly the Lepidoptera. He was a very sincere and active collector even up to the hour of his death. He had gone on a collecting trip in the Pocono Mountains and while there was stricken and died upon his return, after an illness of but fifteen minutes.

His first entomological studies were on the British Lepidoptera and after acquiring almost all the known species in his territory, he started to collect Coleoptera which were his principal interest at the time of his death.

In November of 1912 he left England and came to the United States and made his home in Philadelphia, where, after getting settled, he continued to collect Coleoptera and finally specialized in the Cicindelidae and the Cerambycidae. Mr. Baylis was a commercial artist by profession but devoted all his spare time to collecting and the study of entomology. Most of his field work in this country was done within seventy miles of Philadelphia, Pa. Though his collection does not contain any types, it comprises one of the finest representations of that territory extant. He was a very fine technician and it was a pleasure to examine his collection; every label is of the same size and is set in the same position and height on the pin, and the antennae and legs of every specimen are all set alike, each box making a fine picture in itself.

On March 22nd, 1917, Mr. Baylis was elected a resident member of the American Entomological Society. He was also President of the Feldman Collecting Social and the last meeting of this Society was held at his residence in October, 1926. He was an Honorary member of the Suffolk Naturalists Society of Framingham, England.

In January, 1928, he was appointed an Associate Editor of

ENTOMOLOGICAL NEWS and held that position when he passed away.

Though he did not describe any new species or publish anything, he was one of the most active collectors of recent years in the American Entomological Society, and it is certain that many of his captures will establish new records for the particular territory in which they were taken, all the dates of capture and localities being accurately recorded.

Through his passing the society loses a very valuable member and associate. JOHN C. LUTZ.

A List of Butterflies of the Ozark Region of Missouri.

By AUBURN E. BROWER, Willard, Missouri.

The published lists of Lepidoptera collected by the St. Louis collectors give a good idea of the butterflies of that region. As this locality is about 225 miles southwest of St. Louis, in Greene County, and the records extend the range of a number of species of the East and record some additional Gulf Coast forms, it seems desirable to publish them. A few of the records are for Forsyth, Taney County, Missouri, sixty miles to the south on the White River, and about fifteen miles from the Arkansas line.

Collecting has been carried on for the last fourteen years for Lepidoptera in general. Except for the Hesperiidae, the butterflies have been closely collected so the list should be fairly complete. Questions regarding identification have been checked against the Cornell University collection with aid of Dr. W. T. M. Forbes.

PAPILIO PHILENOR L., common.
POLYXENES Fabr., common.
CRESPHONTES Cram., uncommon.
GLAUCUS L., fairly common.
TROILUS L., very common.
MARCELLUS Cram., uncommon.
form TELAMONIDES Feld., fairly common.
LECONTEI R. & J., common.
ab. BROWERI Gunder, one June 23, 1918. The usual red markings are replaced by deep yellow.

PIERIS PROTODICE Bdv. & Lec., common.
gen. vern. VERNALIS Edw., fairly common.
RAPAE L., very common.
NATHALIS IOLE Bdv., scarce, but became common in 1919 and 1920. One albino has been taken.
ANTHOCHARIS GENUTIA Fabr., very scarce; in April, 1919, a number were taken.
CATOPSILA EUBULE L., common. This species migrates through August, September, and October, coming from the northwest.
PHILEA L. One seen ? when collecting was first started; positively identified at Forsyth, October 11, 1927.
ZERENE CAESONIA Stoll., common.
gen. autumn ROSA McNeill, in the fall, rare in the spring.
form IMMACULSECUNDA Gunder, paratype, September 27, 1917.
EURYMUS EURYTHEME Bdv., common.
gen. vern. AUTUMNALIS Ckll., scarce. The other forms are all believed to be present, but the application of the names seems uncertain.
PHILODICE Godt., very common.
gen. vern. ANTHYALE Hbn., uncommon.
EUREMA MEXICANA Bdv., very scarce. It is fairly common at Forsyth.
NICIPPE Cram., uncommon.
ab. FLAVA Stkr., very scarce.
EUTERPE Men., very common.
form ♀ ALBA Stkr., common.
DANAUS ARCHIPPUS Fabr., common in spring and fall. This species like *Catopsila eubule*, and others migrates southeastward in the fall and northwestward in the spring.
ENODIA PORTLANDIA Fabr., common in the summer.
NEONYMPHA EURYTUS Fabr., very common in June and July.
CERCYONIS ALOPE race OLYMPUS Edw., fairly common, common in 1929.
DIONE VANILLAE L., scarce, became rather common in 1926.
EUPTOIETA CLAUDIA Cram., fairly common.
ARGYNNIS IDALIA Dru., very scarce.
CYBELE Fabr., common.
EUPHYDRYAS PHAETON Dru., scarce. All of the colonies of larvae which have been found were upon tall growing Gerardias high up on dry, thinly wooded ridges.

PHYCIODES GORGONE Hbn., uncommon.
NYCTEIS Dbl. & Hew., common.
THAROS Dru., very common.
form MARCIA Edw., uncommon.

ANTHANASSA TEXANA Edw. A single much battered ♀ of this species was taken at Forsyth, October 23, 1927, following two or three days of westerly winds.

POLYGONIA INTERROGATIONIS Fabr., common.
form UMBROSA Lint., common.
COMMA Harris, uncommon.
form DRYAS Edw., rare.
PROGNE Cram., scarce.

AGLAIS J-ALBUM Bdv. & Lecon. This species has been seen twice.
ANTIOPA L., scarce in early spring and fall.

VANESSA ATALANTA L., common.
VIRGINIENSIS Dru., common.
CARDUI L., common.

JUNONIA COENIA Hbn., very common.

BASILARCHIA ASTYANAX Fabr., fairly common.
ARCHIPPUS Cram., uncommon.

CHLORIPPE CELTIS Bdv. & Lec., scarce.
CLYTON Bdv. & Lec., scarce.

ANAEA ANDRIA Scud., common.

LIBYTHEA BACHMANI Kirt., uncommon.

CALEPHELIS BOREALIS G. & R. One was taken August 10, 1919, and a number were found in a limited area in early August, 1926.

STRYMON CECROPS Fabr., common.
M. ALBUM Bdv. & Lec., two specimens, July 26 and October 24.
MELINUS Hbn., fairly common.
TITUS Fabr., scarce in June and July, especially on flowers of *Asclepias tuberosa.*
EDWARDSI Saund., two upon June 14, one June 24. All are very large, collected flying about oak bushes.
CALANUS Hbn., common in June.

MITOURA DAMON DISCOIDALIS Skin., in July, very scarce.

INCISALIA HENRICI G. & R., one April 20, 1919, one seen (?) April 13, 1924.

FENISECA TARQUINIUS Fabr. Two specimens have been taken, both high in the dry hills near the divide; furthermore no alders have been found in this section of the state. In 1927 a number were taken in a yard of hard maples where they

were flitting about Virginia creeper infested with Fulgoridae, this was in Springfield, Missouri.
HEODES HYPOPHLAEUS Bdv., rare until 1926 when a number were taken.
HEMIARGUS ISOLA Reak., scarce, but common one year.
EVERES COMYNTAS Godt., very common.
LYCAENOPSIS PSEUDARGIOLUS Bdv. & Lec., fairly common.
EPARGYREUS TITYRUS Fabr., very common.
ACHALARUS LYCIDAS A. & S., fairly common.
COCCEIUS PYLADES Scud., very common.
THORYBES DAUNUS Cram., common.
PYRGUS TESSELLATA Scud., very common.
PHOLISORA CATULLUS Fabr., common.
STAPHYLUS HAYHURSTI Edw., uncommon.
THANAOS BRIZO Bdv. & Lec., common in early spring.
MARTIALIS Scud., uncommon.
JUVENALIS Fabr., common.
HORATIUS Scud. & Burg., fairly common.
ANCYLOXYPHA NUMITOR Fabr., uncommon.
PAMPHILA LEONARDUS Harris, uncommon.
HYLEPHILA PHYLAEUS Dru., common.
POLITES CERNES Bdv. & Lec., very common.
PECKIUS Kirby, common.
ATALOPEDES CAMPESTRIS Bdv., very common.
CATIA OTHO EGEREMET Scud., common.
POANES HOBOMOK Harris, fairly common.
form POCOHONTAS Scud., uncommon.
ZABULON Bdv. & Lec., uncommon.
ATRYTONE AROGOS Bdv. & Lec.
EUPHYES VESTRIS Bdv., uncommon.
AMBLYSCIRTES VIALIS Edw., uncommon.
CELIA Skin., one July 25, 1929, and one imperfect specimen that is probably this at Forsyth September 14, 1927. Compared with specimens in the U.S.N.M.
MEGISTIAS FUSCA G. & R., scarce.
LEREMA ACCIUS A. & S., one October 15, two October 22.
LERODEA EUFALA Edw., uncommon.

Prof. G. F. Ferris at Cambridge, England.

Professor G. F. Ferris, of Stanford University, is spending the present academic year at Cambridge University, England, in the Molteno Institute of Parasitology. During this time he expects to complete the series of papers on "Contributions Toward a Monograph of the Sucking Lice" and to carry out some other work in connection with ectoparasitic insects.

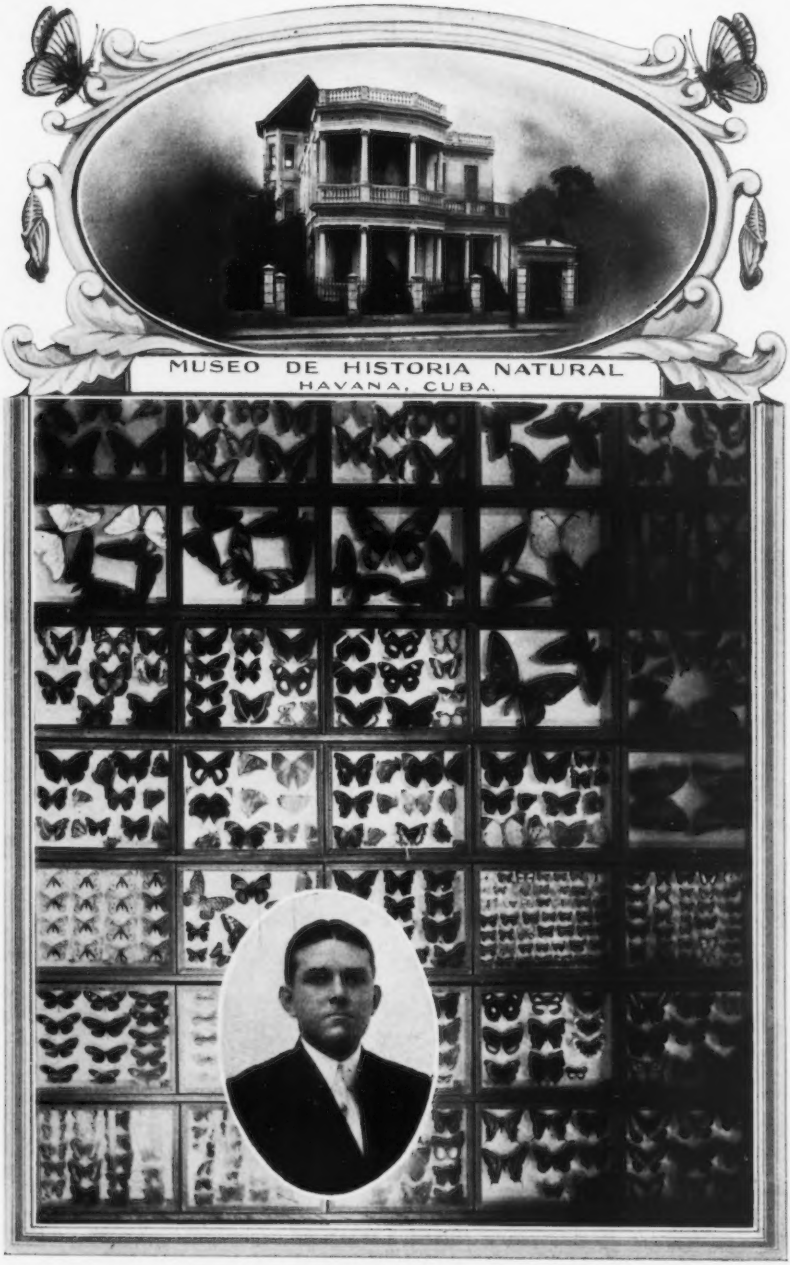
North American Institutions Featuring Lepidoptera. XVIII. The Museums of Cuba.

By J. D. GUNDER, Pasadena, California.

(Plates XXVI-XXVIII.)

The study of entomology is going right ahead in Cuba and the people in general seem to be taking more interest in the subject, as evinced by the increased number of local collectors. The museums are featuring better public displays of insects than formerly, so I believe the next decade will witness a marked advancement in the working out of the fauna of the Island. What is needed in the future are more men like Dr. Mario Sanchez Roig, Director of the Natural History Museum of Havana. Dr. Roig is an all-around naturalist, specializing in paleontology, as well as entomology and he has built up the largest museum of natural history in the Country. It is located at No. 827 Cerro Street in an old residence adapted for museum purposes, but a new building is contemplated on the site within the next few years. Dr. Roig began active field work in 1903 and not long ago opened his Institution to the public. He is fortunate in having the cognizance and support of the Government and only recently issued the first bulletin called "Memoria", as Volume I, Number I. There is an excellent cabinet of display butterflies in his museum and the Lepidoptera study collection consists of eighty drawers and some 250 boxes containing about 14,000 specimens. Cuban Sphinges, Catopsilias and Papilios are well represented. Some of this material was collected by Mr. Cervera and Mr. Gomez de la Maza who are local enthusiasts. Dr. Roig is to be congratulated upon his excellent work which at times has been carried on under great difficulty.

In the Institute of Havana is found the Valle Yznage Museum. (See plate XXVII). It consists of several rooms and was the gift in 1896 of Mr. Modesto del Valle. Here are displayed good collections of Cuban and foreign birds and mammals and also a fair collection of Cuban insects prepared by Gundlach during his trips through the Island from 1860 to 1890. There is also a considerable collection of nearly 4000 species of Cuban and foreign shells.



DR. MARIO SANCHEZ ROIG

In the same Institute, but entirely individual, is a room which is called the "Museo Cubano Gundlach". In this depository are kept many of the type specimens of Coleoptera, Lepidoptera, Diptera, etc., which were described by Gundlach. I am sorry I have such meager data on this evidently important material, but there is a pamphlet called "Zoologia" or "Catalogo General" describing this little museum and its collections which was written by Dr. Pedro V. Ragnes in 1914. This catalogue consists of 150 pages of text and probably gives note of many of Gundlach's original specimens. Aside from Lepidoptera the room contains a very complete collection of Cuban birds captured and prepared by this gentleman. I am glad to produce on plate XXVII, a picture of Colonel Serafin Espinosa, M.M. He is Director of the Havana Institute and also Auditor del Ejercito de Cuba. Colonel Espinosa advocates greater study of natural history subjects in Cuban schools and in doing splendid work in popularizing the biological sciences.

In addition to the museums in Havana, there is an important institution in the City of Santiago de Cuba, which is the next largest municipality and is situated in the eastern portion of the Republic. It is called the Bacardi Museum and was opened to the public on May 20, 1928, as a gift from the widow of Emilio Bacardi, a wealthy Cuban manufacturer. The building is a beautiful structure and cost about $80,000. (See plate XXVIII). Its collections consist mainly of historical relics from the war of Cuban Independence which was fought for the most part in the mountains around the city. However, there is some natural history material, including a series of birds and a few mammals. The Lepidoptera consist of a cabinet of specimens collected by Mr. E. Chivas in the neighboring hills and these are of value because of being mounted and named by Gundlach. The Rhopalocera are well represented, while the Heterocera consist of a few showy specimens. Perhaps the most interesting specimens are three co-types of *Papilio gundlachi*. Mr. Jose Bofill and his son are directors of the Institution and are doing what they can to build up the collections. It is due to the persistence of the elder Mr. Bofill that the Museum came into existence and

his son will undoubtedly carry on the labors so well commenced.

American entomologists will be interested in reading something of the life work of Mr. Ozario Querci who with his family are at present collecting Lepidoptera near the City of Santiago. This famous European family has an internatonal reputation for field work and for the last year or more has been employed jointly for Messrs. F. Johnson, A. G. Weeks and R. C. Williams collecting in eastern Cuba. There is hardly a collection in Europe or, for that matter, in any part of the world which does not have butterflies collected by this gentleman. A photograph of Mr. and Mrs. Querci, his daughter, Mrs. Romei and grand daughter, Lycaena is shown on plate XXVIII; together with Dr. F. Sabas, a Cuban naturalist and Mr. Bofill and his son. Little Miss Lycaena Romei has the unique distinction of being named after that popular genus of butterflies. Mr. Querci has kindly given me the following personal biography. It reveals the joys and sorrows of the entomological "game" and unfolds the life of a real European lepidopterist.

"I was born in Rome, Italy, on October 11, 1875," writes Mr. Querci, "and as a child collected butterflies which Mother and I used to set into books. Studied chemistry at the University of Rome and later became a state officer for testing precious metals. When about sixteen years old I met Miss Clorinda Di Nino who also liked to collect butterflies and in 1896 we were married and had our daughter Erilda. Being continually employed and with little time and less money to devote to field work, it was not until 1908 that I sent my first rather poor captures in exchange to Dr. Otto Staudinger of Dresden. In 1909 we lived at Formia near Naples and by this time my daughter was old enough to accompany her mother when she was going into the country and they made good captures, especially near the district of Aurunci. I went to Milan and offered the specimens to Count Turati, who took the best rarities and asked his servant to give me some money. As I only received 50 liras, I returned home discouraged and threatened to do no more with entomology. However, before completely renouncing my hobby, I wrote Mr. Charles Oberthür of Rennes and for several years he generously supported our collecting.

In 1914 due to the war Mr. Oberthür had to stop purchasing, but out of the kindness of his heart he donated me one complete copy of his great work "Études de Lépidoptérologie comparée." This same year we went to Florence to live where we continued to collect and I made field trips to Calabria. My women folks the next year journeyed to the Island of Elba for specimens and in that period of the war were suspected of being spies, but their business was eventually understood. In 1917 my wife and daughter made a long trip to collect above Palermo in Sicily. There living was hard and dangerous as people said deserters of the war were hidden in the mountains. During all those trips my family sent me their catches by post daily and sometimes the specimens arrived in Florence fresh and almost alive. I mounted them with the help of a clever boy and sometimes was obliged to work the whole night. Often I did not have much money to buy food as I sent what money was earned back to the family. Dr. Roger Verity gave me some support, but as he only paid 10 liras per 100 mounted specimens and a moderate rate for rarities, we suffered poverty. Our beautiful Sicilian material finally allured Lord Rothschild, Mr. Bethume-Baker and other British lepidopterists and they began purchasing at suitable rates, so that my wife and daughter could afford to make unhampered tours in Calabria, Campania, Abruzzo, Molise, Romagna and Garfagnana. They lived in the last named country during the disastrous earthquake. This period of our field work marked the beginning of better times, at least for a period.

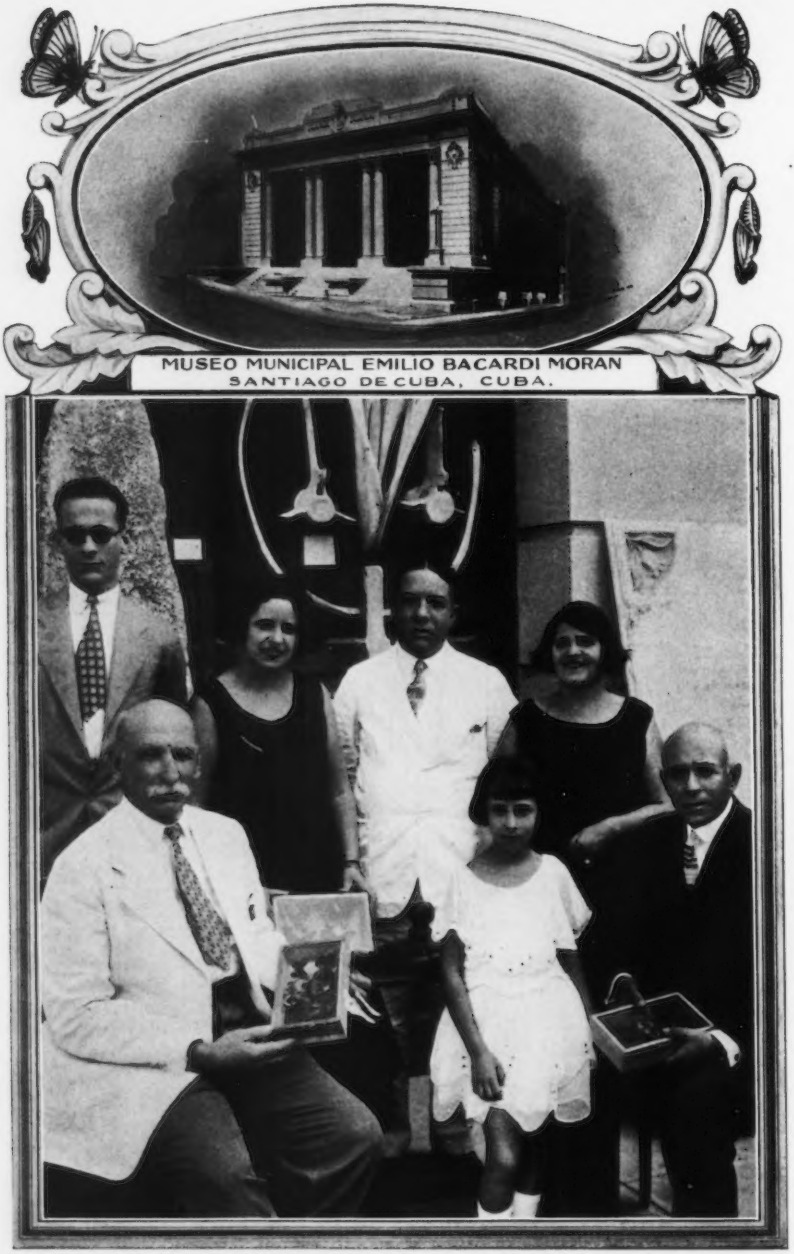
In 1920 my daughter married Dr. Enzo Romei and they had their daughter which we named Lycaena. I was a pensioner and dedicated all my time to lepidopterology with the help of my son-in-law. Together with Dr. Verity I published in the 'Entomologist's Record' of London, 'An annotated List of the Grypocera and of the Rhopalocera of Peninsular Italy.' Some other articles were also published in the same magazine and in the Oberthür volumes. In 1924 the Italian Government asked us to collect in Northern Africa at Tripolitania. Dr. Romei went there first alone and later with his wife. About this time the Museum of Barcelona asked me to undertake some explor-

ation in Spain and the agreement was almost signed when the Dictator Primo De Rivera annulled the contracts made by the Catalan people. I did not want to renounce this good trip, so my wife and I pawned what we had in our home and we went to Spain. I had no idea that living in that country was so expensive and when we arrived on June 3, 1924 in Aragon, we saw that we did not have money enough to return home and therefore had to keep on ahead. I wrote to all the European men I knew asking them for advances on material. We had to continue our enterprise. Fortunately from England, France, Belgium and Austria came fine responses, and in Aragon my wife discovered the new species which Mr. Sagers named *Coscinia romei*, dedicating it to my granddaughter Lycaena. In the spring of 1925 my son-in-law started for Sierra Nevada (Andalusia) and with the help of Lord Rothschild, Mr. Bethune-Baker and Mr. Williams, of Philadelphia, he found one local form of *Parnassius apollo* which was considered one of the rarest European butterflies. In 1926 we went to Cuenca (New Castile) for Lord Rothschild because he wished some specimens of *Zygaena ignifera* which is a rather good thing. Wife and I left for Portugal in 1927 and there I was named Naturalist of the University of Lisbon. With this new income I was able to have my daughter and granddaughter again with us to help collect, and from Portugal we again went to Cuenca, but my daughter returned to Italy again because there was a children's epidemic and we didn't want to risk her life. While I was at Cuenca, I was asked to go to Barcelona and write a 'Catalogue of the Diurnals of the Iberian Peninsula' which I did the following season. My daughter and granddaughter had by this time returned to us and we enjoyed splendid collecting in the Pyrenees Mountains. Just now we are all in Cuba with the help of our American friends and the collecting is proving quite good. I would like to work in Haiti, but doubt if it is possible.

I have known and dealt with most European lepidopterists and I think that my best friend was Oberthür, at least he gave me my start. Altogether I should guess, as a family, we have collected over half a million butterflies. Most European cab-

MUSEO "VALLE YZNAGA"
HAVANA, CUBA.

COLONEL SERAFIN ESPINOSA



Standing—BOFILL, Jr., MRS. ERILDA ROMEI, DR. F. SABAS, MRS. QUERCI
Seated—JOSE BOFILL, LYCAENA ROMEI, ORAZIO QUERCI

inets hold series of our labors and I have never knowingly mounted a poor specimen. Our best series of butterflies is probably in the Tring Museum, as Lord Rothschild received the choice for some twelve years. Interesting numbers are in the Museum of Biology of Barcelona and Bocage Museum of Lisbon. In the Academy at Philadelphia is a good series of Rhopalocera and Grypocera purchased by Mr. Williams, also a fine series of Italian Grypocera. Specimens are also in Boston (Weeks collection), in Reading, Pennsylvania, and in Montreal. Of course, there are untold lots sent all over Europe, India, Japan and elsewhere. The Roger Verity collection in Florence, Italy, contains many fine lepidoptera from our native home collecting and he has some few specimens from the Iberian Peninsula. Cristo, Cuba. February 3rd, 1930."

The Puparium of Basilia corynorhini (Ferris) (Diptera : Nycteribiidae).

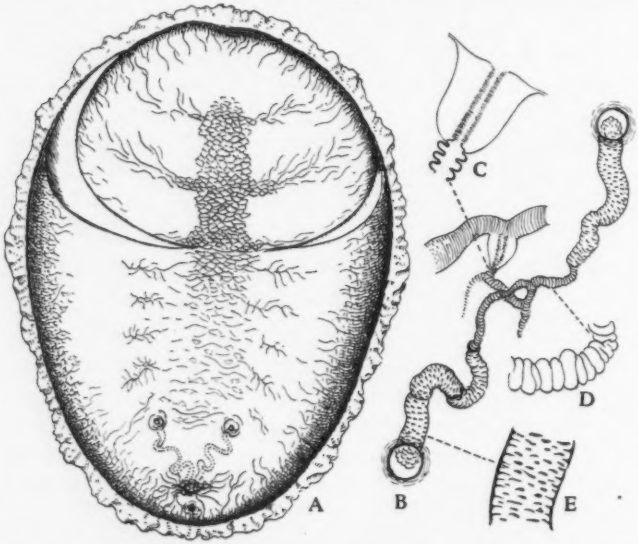
By G. F. Ferris, Stanford University, California.

The information at present existing in regard to the developmental stages of the Nycteribiidae is still sufficiently meager to justify any additions that it may be possible to make. The larvae of various species have been seen and briefly described, something is known of their internal structure, and in the case of two species, *Cyclopodia greefi* Karsch and *Eremoctenia progressa* (Muir), there is available detailed information concerning the developmental stages and reproductive habits. There seems to be no information concerning the immature stages of any of the New World species.

Puparia of *Basilia corynorhini* (Ferris) were found by the writer in some abundance deep in a mine tunnel in Deep Springs Valley, Inyo County, California, Sept. 24, 1928. These puparia were attached to the rock and appeared as flattened, black objects about 2 mm. long, looking very much like the familiar puparia of Aleyrodidae. Although they clung closely to the rock they could be removed without injuring them. Many of the puparia were empty, but several contained adults that were ready to issue and which permit the identification of

the species. It has previously been known from a single adult female.

These puparia agree very closely in their general character with those of the two species mentioned above. The ventral side, as in the other species, is thin and translucent, the dorsal side convex, heavily sclerotic and pigmented. It is evident that



Basilia corynorhini (Ferris).—A, puparium, dorsal aspect, operculum partially broken away; B, spiracular openings and tracheal trunk of right side; C, D, E, details of tracheal trunk from areas indicated.

in this species, as in the others where the process of larviposition has actually been observed, the larva is pressed by the female against the substratum while still soft and thus more or less "glued" down. About the margin there appears a thin, irregular rim that is evidently formed at this time.

The general appearance of the larva is as shown in the figure. The sclerotic derm of the dorsum is marked with rather faint reticulations, which in the median region become more distinct. Segmentation is very faintly indicated by the direction of the sculpturing. The anterior third or more of the

dorsum is involved in the operculum which breaks away at the time of emergence of the adult.

The tracheal system pertaining to the larva remains in part attached to the puparium. It is of a type that has been described at various times in the Nycteribiidae, but it has been possible to make some observations that extend our knowledge of the details of its structure. As in other Nycteribiidae, there are four spiracular openings, arranged in a triangle toward the posterior extremity of the body, the members of one pair being close together and borne on a slight tubercle. These are simple openings. The members of each lateral pair are connected by a longitudinal trunk (fig. B). In this species these trunks present some peculiar characteristics. The trunk is of a quite definite form, the curves as shown in the figure being apparently rather definitely fixed. For about one third of its length from each opening the trunk is of rather large diameter, is smooth walled, with numerous papillae on its inner surface (fig. E). The median third, however, is noticeably smaller and is composed of a series of coarse rings almost suggesting a string of beads (fig. D). From the middle point there arises a single, slender, coarsely-ringed branch, which sends off two short caecum-like branches and then expands into a curious, smooth, bell-shaped structure (fig. C), with a very narrow, fringed lumen, that communicates directly with the main tracheal trunk. Speiser has described the main tracheae of one species as lacking taenidia, but they are certainly present in the small portions of the trunks that remain in the specimens at hand.

A specimen of the larva of *Nycteribia pedicularia* Latr. is at hand for comparison and it would appear that there are differences in the tracheal systems of these two species. In *N. pedicularia* the tracheal trunks are of the same size throughout and are of the same character as the thicker portions of the trunk in *B. corynorhini*. It is possible that careful study will show differences which might permit at least the generic identification of such puparia.

The male of *B. corynorhini* has been unknown. Males are present in the material dissected from puparia, but it is hardly possible to figure and describe them accurately.

On the Naming of Individual Variants in Lepidoptera.

By ALEXANDER B. KLOTS, Cornell University, Ithaca, N. Y.

Of late taxonomists have been viewing with more or less irritation and alarm the increasing tendency of some workers to apply scientific names to individual variants in a wholesale manner, and even to establish systems to be followed in such application of names. It is very much to be hoped that this matter may be brought forward for open discussion by as many people as possible, in order that something may be done to reconcile such actions with recognized methods of scientific procedure, if such is possible.

Any recent worker in North American diurnals cannot have failed to find himself swamped in a sea of "transition forms", a term under which Mr. J. D. Gunder has been applying scientific names to a very large number of individual variants. As an aid in the application of such names Gunder has formulated a system of classification for the RHOPALOCERA (1) in which are included a number of points which appear to merit serious consideration. Inasmuch as Cockerell has recently commented upon this system, (2) pointing out some of the weak places, the present writer hopes that a discussion may be started of some of the points involved, and that Mr. Gunder will see fit to explain these points through the pages of this or of any other periodical.

WHAT, BIOLOGICALLY, ARE INDIVIDUAL VARIANTS?

The author considers that any individual which differs noticeably from the norm of its species (whatever that may be) will fall into one of the two very general categories which follow:

1. The characters in which the individual differs from the norm of its species have been caused by the direct effect of environment upon the soma alone, are not inheritable, and will not be directly transmitted to the offspring of the individual.

2. The characters in which the individual differs from the norm of its species, however caused, are inheritable and may be transmitted directly to the offspring of the individual.

The fundamental difference is that of inheritance. We cannot admit that any characters in an individual, no matter how striking, unless they are controlled by the germ-plasm, can directly affect the evolution of the species to which the individual belongs. Such individuals may indeed be of interest to the person interested in gathering together a collection of oddities; they may be of potential interest to the taxonomist if it is considered that the influence which produced the somatic changes may conceivably produce a change in the germ-plasm; but in comparison with those individuals in which a modification of the germ-plasm has actually taken place they must always occupy a place of very minor importance.

On the other hand it is undoubted that variants whose variations are directly inheritable hold the utmost significance for the student of taxonomy, for such individuals must undoubtedly have some effect on the evolution of their species. Just how great or how little this effect may be depends on an infinity of circumstances, but unquestionably merits the most careful investigation. It is equally obvious that investigation of such variants or "Mendelian forms" or "mutants" to give them their recognized names, should be made only by a worker with a knowledge of genetics, who will perform careful and exhaustive breeding experiments. To attempt the classification of such mutants, knowing nothing whatsoever about them except their appearance, and taking into account only the most prominent features of that, is to show either an almost complete ignorance of modern biology, or an unquenchable but misplaced optimism. Equally useless and misleading is any attempt to state whether any given variant can possibly affect the evolution of its species without exhaustive experiments by a trained worker to accurately determine the genetical status of the variant. Even this is not sufficient. A mutation may occur frequently enough to be of interest to a collector of oddities without being able to have any appreciable effect on its species. In such connection Jordan's Law, which postulates the existence of some sort of a barrier between all separating subspecies, is of the utmost importance. The mathematical calculations of Gerould (3: p. 520-

525) as to the chances of mutations affecting the general population of a species are extremely significant. Any work that does not take these factors into consideration is hardly to be taken seriously as far as its scientific value is concerned.

What are Transition Forms?

As defined by Gunder (1) the "transition form" is composed of "individuals which occur irregularly within a species or within a race, and which by change of color or by change of pattern graduate with persistent characteristic similarity from near parental type up to definitely limited variation away from parental type." In the first sentence of the same article the statement is made that "The transition forms of the order Lepidoptera represent the most tangible and discernible evidence we can offer of gradual evolutionary change taking place within any of the orders of the insect class." In a very recent article (4) Gunder further states that "We are making a progressive step in that direction by classifying transition forms and allowing them the recognition they deserve. Their grade on the evolutionary stage is no longer a matter of guess work."

According to the above statements the "transition form" is supposed to affect the evolution of its species in a definite way. It must be understood that this way is with regard to the color and pattern differences which Gunder describes as occurring between the "transition form" and normal individuals of the species. It seems evident that according to this theory the "transition form" must be able to transmit the characters for these differences directly to its offspring by means of the germ plasm. If it were not able to do so it could hardly affect the evolution of its species unless we wish to suppose that its mere presence would inspire its more normal brethren to higher and more aberrant aims in life.

The "transition form" may therefore be regarded as a mutant in those characters in which it differs from the norm of the species. It is therefore by definition probably merely another name for "Mendelian form" or "mutant", and as such is superfluous.

The phrase "persistent characteristic similarity" is evidence that in defining "transition form" Gunder had some idea of orthogenesis in mind. Whether any of the various theories known as orthogenesis are acceptable or not is hardly to be discussed here. One thing only is evident—before any series of variants can be regarded as in any way orthogenetic that type of variation must be shown to occur with some degree of frequence. For the great majority of "transition forms" named by Gunder this will not hold. Most of them are of very rare occurrence compared to the great numbers of normal individuals of the species. Their orthogenetic status is therefore very doubtful.

All of this is, however, taking a great deal for granted. Before describing any specimen or series of specimens as a "transition form", mutant or member of an orthogenetic series the exact status of that specimen should be known, and the only way to accurately determine this status is by careful genetical experiments. The mere appearance of a specimen counts for very little, and is often misleading. By appearance alone nobody, in the absence of breeding experiments, can safely state whether any specimen is a mutant or a somatic-limited variant. It is well known that many striking variants may be produced by subjecting the pupa to extremes of temperature or humidity (5 and 6). It is equally well known that many other striking variants are mutants (3, 7 and 8).

There is therefore a considerable probability that Gunder has by practice made the term "transition form" fully as inclusive as "aberration" to which he himself objected as too inclusive. The use of the term should therefore be stopped before further confusion results.

On the Classification of Transition Forms.

Gunder has proposed a system for the classification of "transition forms" in which all such variants are placed in one of the following categories: melanism, chromatism, albinism, pellucidism, immaculism, albifusism, chromatifusism and melanifusism.

The following subjects for classification under this system are suggested:

1. The forms of *Heliconius melpomene* in large series.
2. The eye colors of *Drosophila melanogaster.*
3. The melanic and melanistic forms of *Selenia bilunaria, Tephrosia Ectropis bistortata* and *Tephrosia E. crepuscularia.* (The melanic forms of the first two are Mendelian recessives, that of the last one is a Mendelian dominant, and the intermediate forms are heterozygous (7)).

In example 1 application of this system would be nearly impossible, and meaningless; in example 2 it would be meaningless and misleading; and in example 3 it would be misleading; in all three it would cause confusion and would be a sheer waste of time. The system of the geneticists is unquestionably better.

This classification, taking into account as it does only a few of the most prominent characters, is necessarily incomplete and superficial. No attention is paid to structural characters or, of course, to lethals, the appearance of which may profoundly affect the evolution of a species.

However the main point in which exception is taken to this system is that the classification is based on only a few phenotypic characters. While granting that to some people a purely phenotypic classification of mutants may be desirable, the writer postulates that to be worth anything such a classification should include *all* characters, not merely the most obvious ones.

It is an undeniable fact that the more a person knows about any phase of biology the more he comes to realize that most broad generalizations are untrustworthy. Such an attempt as Gunder's to classify all pattern changes of Lepidoptera, or even of Rhopalocera, or even of North American Rhopalocera in eight categories is one of these untrustworthy generalizations. That such a generalization may lead to actual error is all too obvious. The case of the GEOMETRIDAE cited is an excellent example of this.

(To be continued.)

Distributional List of Tachinid Flies from Utah.*

By J. A. Rowe, University of Utah, Salt Lake City, Utah.

This paper represents a preliminary study of the distribution of the Tachinid Flies from Utah. It is based upon specimens of this group which are now in the collections of the University of Utah, at Salt Lake City, and the Brigham Young University, at Provo, Utah. This List is by no means complete, and as further collection in the state proceeds, no doubt, many new records will be added.

At this time I wish to express my appreciation and gratitude to Dr. R. V. Chamberlin and Mr. A. M. Woodbury under whose direction this work was undertaken, and whose suggestions and criticisms have proved invaluable. I wish to thank Dr. V. M. Tanner of the Brigham Young University who has so generously turned his collection over to me, and finally Dr. J. M. Aldrich of the U. S. National Museum, who has verified all my determinations and has so kindly returned all specimens sent to him. He has also given me many references to literature that would have otherwise taken much time to find.

Viviania georgiae B. & B. St. George, 1924, A. M. Woodbury.

Belvosia bifuscata Fab. Salt Lake City.

Melanophrys flavipennis Will. University of Utah Campus, Salt Lake City, 1929, L. A. Woodbury.

Linnaemyia comta Fall. Cedar City, 1919; Miners Peak, Iron Co., 1919; Parowan, 1919, H. R. Hagan.

Ernestia ampelus Wlk. Flaming Gorge, Green River, 1926, V. M. Tanner; Salt Lake City, 1915, H. R. Hagan.

Metaphyto genalis Coq. Salt Lake City, (U. of U. Campus), 1918, H. R. Hagan.

Phorocera floridensis Ins. St. George, 1919, H. R. Hagan,

Winthemia quadripustulata Fab. Aspen Grove, Elev. 8000 ft. (Near Provo), V. M. Tanner.

Tachinomyia sp. Zion National Park, 1929, Coll. A. M. Woodbury.

Gonia seguax Will. Salt Lake City, 1920, on blossoms of

* Contribution from the Zoological Laboratory of the University of Utah. No. 38.

Milletus, Coll. T. R. Chamberlin.

G. EXUL Will. Logan, 1929; Yosemite National Park, Calif., 1925, Coll. V. M. Tanner; Bismarck, N. D. M. W. Reese.

G. FRONTOSA Say. Salt Lake City, 1924-1928, Coll. A. M. Woodbury; Provo, 1928, J. A. Rowe.

G. sp.? Three other specimens of *Gonia* are in our collection which have the following records: Hamlin Valley, 1928, on *Opuntia* sp?; Springdale, 1928, V. M. Tanner; Santa Clara, 1928, A. M. Woodbury; Flaming Gorge, on thistles, 1926, V. M. Tanner.

SPALLANZANIA HESPERIDARUM Will. Sheep Creek, Duschene Co., 1926, Clarence Cottam.

TROCHILODES SKINNERI Coq. Aspen Grove, Elev. 8000 ft., 1928, V. M. Tanner.

PELETERIA ITERANS Wkl. Salt Lake City, 1915-1923, T. R. Chamberlin; Cedar City, 1919; Bellevue, 1919, H. R. Hagan.

P. CORNIGERA Curr. Aspen Grove, Elev. 8000 ft., 1929, V. M. Tanner.

P. INCONFESTA Curr. Aspen Grove, Elev. 8000 ft., 1929, V. M. Tanner.

P. CAMPESTRIS Curr. Maple Canyon, 1923, S. Aldous; St. George, 1919, H. R. Hagan; Cedar City, 1919, H. R. Hagan; Tooele, 1927, A. M. Woodbury; Eureka, 1927, A. M. Woodbury.

P. TOWNSENDI Curr. St. George, 1929, V. M. Tanner.

ARCHYTAS LATERALIS Macq. Santa Clara, 1919, H. R. Hagan.

PARACHYTAS DECISA Wlk. Sheep Creek, Duschesne Co., 1926, C. Cottam; Lake Hotel, Yellowstone National Park, 1929, V. M. Tanner; Parowan Canyon, 1918, H. R. Hagan.

FABRICIELLA ELEGANS Wied. Collected in Utah but exact locality unknown.

F. DAKOTENSIS Towns. Wellsville Canyon, flying among the flowers, 1926, V. M. Tanner.

F. ROSTRATA Tothill. Cedar City, 1919; Salt Lake City, 1915-19, S. J. Snow.

F. ACUMINATA Tothill. Maple Canyon, San Pete Co., 1923, S. Aldous.

F. SPINOSA Tothill. Male Canyon, Sanpete Co., 1923; Parowan, 1919; Miners Peak, Iron Co., 1923, A. M. Woodbury.

HYSTRICIA ABRUPTA Wied. Aspen Grove, Elev. 8000 ft., V. M. Tanner.

DEJEANIA VESTATRIX O. S. Parowan Canyon, 1923; Maple Canyon, Sanpete Co., 1924; Zion National Park, 1924; Coll.

A. M. Woodbury. Provo, 1929, V. M. Tanner; Sheep Creek, Duschesne Co., 1926, C. Cottam.

PARADEJEANIA RUTILOIDES Jaen. Box Canyon (Maple Canyon?) 1923, Coll. A. M. Woodbury.

JURINIOPSIS ADJUSTA V. I. W. Box Canyon, Sanete Co., 1923; St. George, 1923, A. M. Woodbury.

WOHLFAHRTIA MEIGENII Schin. Cedar City, 1919, H. R. Hagan.

MASIPHYA CONFUSA Ald. Parowan Canyon, 1919, H. R. Hagan.

APHTIA OCYPTERATA Towns. Aspen Grove, Elev. 8000 ft., 1928, V. M. Tanner.

Dynastes tityus in Pennsylvania and Delaware (Coleop.: Scarabaeidae).

Dear Dr. CALVERT: I was much interested in your *Dynastes tityrus* paper in the June NEWS, partly because the insect has turned up here in New Castle County, Delaware, twice to my knowledge, and partly for a reason which I will explain. First, I have an earlier published record for "Pennsylvania". If at the Academy you will take down Vol. IV (1774) of DeGeer's *L'Histoire des Insectes,* and turn to page 306, you will find this record, and reference to an illustration of the insect, Pl. 18, fig. 10. A portion of the text reads: "M. Acrelius m'a envoyé ce Scarabé de Pensylvanie, ou, il l'a trouvé dans les bois. * * * M. Acrelius m'a dit, que le Scarabé pince très-fort avec ses deux grandes cornes, que se recontrent avec leurs pointes quand il hausse le tête." And now comes my other reason for special interest in DeGeer's insects of 'Pensylvanie'. Acrelius was the Swedish pastor at *Christina (Wilmington, Delaware);* many if not most of the North American insects described by DeGeer were sent him by Acrelius, with frequent text references to this fact, sometimes "captured by Acrelius in his garden", etc. Acrelius was here from 1749 to 1756. After his return to Sweden he wrote "A History of New Sweden", which has been translated into English and published by the Historical Society of Pennsylvania, 1874. In the preface to his "History", Acrelius wrote "Although my recreation consisted, in a great measure, in the collection of insects, birds, fish, quadrupeds, plants, ores, gravels, clay, etc., which I gathered at the expense of his Excellency, the Chamberlain, Mr. Charles deGeer, for his valuable cabinet". * * * In his day, what is now Delaware,

spoken of as the three lower counties on the Delaware, *was* part of the Province of Pennsylvania. Acrelius was "Provost of the Swedish Churches in America, and Rector of the Old Swedes' Church, Wilmington, Del." and undoubtedly was familiar with portions of Pennsylvania proper, as well as with the three lower counties (now Delaware). It would be interesting to go through DeGeer more thoroughly than I have attempted to do, and to determine in how many instances his references to collections by Acrelius are definite enough to change type localities from "Pensylvanie" to New Castle County, Delaware.

The Swedish pastors—several of them at least—took a keen interest in natural history. In the library of the Pennsylvania Historical Society, Philadelphia, is a type-written copy (translation) of the journal of Hesselius, who took charge of Christina Parish, 1713. This 80-page manuscript (never published, I believe) is largely taken up with natural history observations, and includes a most interesting account of the 17-year cicada, as he observed it and inquired into its history. I do not recall that he mentions *Dynastes*, which I suppose has always been a rarity here; the two captures referred to in the early lines of this letter were taken perhaps twenty years ago (they are in the collection of our local Society of Natural History), and I'm not sure that record was made (or if made, preserved) of their dates of capture.

I'm sorry that Acrelius, as he says, "carefully abstained from the department of Natural History" (meaning, I suppose, for publication) "inasmuch as the celebrated Professor Kalm, somewhat before, and during my time, was visiting the same regions for this special object". I hope, some day, you'll take a look at the Hesselius paper, which I took notes from several years ago and found very interesting.

In the first edition of Say's "American Entomology," of which I believe a copy is kept under lock and key at the Academy (Mr. Cresson will recall it), plate II and text (pages not numbered) relate to "*Scarabaeus tityus*", and fix the date of its occurrence in the old cherry tree at Philadelphia at about 1813 ("about four years ago", Say's publication being dated 1817).

FRANK M. JONES, Wilmington, Delaware.
2000 Riverview Avenue,

Entomological Literature

COMPILED BY LAURA S. MACKEY UNDER THE SUPERVISION OF E. T. CRESSON, JR.

Under the above head it is intended to note papers received at the Academy of Natural Sciences, of Philadelphia, pertaining to the Entomology of the Americas (North and South), including Arachnida and Myriopoda. Articles irrelevant to American entomology will not be noted; but contributions to anatomy, physiology and embryology of insects, however, whether relating to American or exotic species will be recorded.

The numbers **within brackets** [ ] refer to the journals, as numbered in the list of Periodicals and Serials published in the January and June numbers (or which may be secured from the publisher of Entomological News for 10c), in which the paper appeared. The number of, or annual **volume**, and in some cases the part, heft, &c. the latter **within** ( ) follows; then the pagination follows the **colon** :

All continued papers, with few exceptions, are recorded only at their first installments.

•Papers containing new forms or names have an • preceding the author's name.

(S) Papers pertaining exclusively to neotropical species, and not so indicated in the title, have the symbol (S) at the end of the title of the paper.

For records of Economic Literature, see the Experiment Station Record, Office of Experiment Stations, Washington. Also Review of Applied Entomology, Series A, London. For records of papers on Medical Entomology, see Review of Applied Entomology, Series B.

☛*Note the change in the method of citing the bibliographical references, as explained above.*

Papers published in the Entomological News are not listed.

GENERAL.—Barnes, W.—Obituary. By Schaus, Busck & Heinrich. [10] 32: 114, ill. **Calman, W. T.**—The taxonomic outlook in zoology. [31] 126: 440-444. [68] 72: 279-287. **Dow, R.**—Notes on the prey of wasps. [5] 37: 181-182. **Gronemann, C. F.**—Fifty common plant galls of the Chicago area. [Field Mus. N. H.] Bot. Leafl. 16: 30pp., ill. **Handlirsch, A.**—Handbuch der zoologie. IV. Progoneata. Chilopoda. Insecta. Lief. 8: 801-892, ill. **McAtee, W. L.**—Support of the Zoological Record. [Science] 72: 247. **McDunnough, J. H.**—Insects from Baffin Island. [Bull. Nat. Mus. Canada] 53: 118. **Mellor, J. E. M.**—An ant-proof shelf for use in either laboratory, kitchen, or larder, in countries where ants are a nuisance. [Bull. Soc. R. Ent. Egypte] 1930: 36-37, ill. **Metcalf, Z. P.**—Nomenclature. [Science] 72: 318-319. **Mickel, C. E.**—Descriptions plus types vs. descriptions alone. [5] 37: 118-131. **Ramaley, F.**—Specialization in science. [68] 72: 325-326. **Rendell, E. J. P.**—Depredations to lead-covered aerial cables by beetles in Brazil. [10] 32: 104-113, ill. **Ressler, W.**—Entomologie und naturschutz. [18] 24: 203-209. **Richmond, H. A.**—A coleopterous fish. [4] 62: 184. **Seitz, A.**—Goyaz-reise. (S). [17] 47: 29-32, ill., cont. **Wood, H. E.**—Priority in family, order and higher group names. [68] 72: 219-220. **Woodworth, C. W.**—The arrangement of the major orders of insects. [5] 37: 157-162.

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pis] 26: 68-88, ill. **Wiedemann, J. F.**—Die zelluloseverdauung bei lamellicornierlarven. [46] 19: 228-258, ill. **Yung-Tai, T.**—Recherches sur l'histogenèse et l'histophysiologie de l'épithélium de l'intestin moyen chez un Lépidoptère (Galleria mellonella). [Bul. Biol. Fr. & Belg.] Suppl. 12: 144pp., ill.

ARACHNIDA AND MYRIOPODA.—André, M.—Sur une larve d'acarien parasite de l'homme et des animaux en Uruguay, appartenant au genre Thrombicula. [54] 8: 355-361, ill. **Attems, G.**—Myriapoda. 2. Scolopendromorpha. [Das Tierreich] 54: 308pp., ill. **Bristowe, W. S.**—Notes on the biology of spiders. I. The evolution of spiders' snares. II. Aquatic spiders. III. Miscellaneous. [75] 6: 334-353, ill. ***Bryant, E. B.**—New species of the genus Xysticus (Arachnida). [5] 37: 132-140, ill. ***Marshall, R.**—The water mites of the Jordan Lake Region. [Trans. Wisconsin Acad. Sci., Arts & Let.] 25: 245-249, ill. **Verhoeff, K. W.**—Bronns Tier-reichs in wort und bild. Bd. V. Abt. 2, Myriapoda. Diplopoda. Lief. 10: 1523-1674, ill.

THE SMALLER ORDERS OF INSECTS.—*Banks, N.—Some new Neotropical Neuropteroid insects. [5] 37: 183-191, ill. **Lestage, J. A.**—La dispersion holarctique de quelques Ephémeroptères. [33] 70: 201-207. **Remy, P.**—Les Collemboles du Groenland. [Meddel. om Groenland] 74: 57-70. ***Stewart, M. A.**—New nearctic Siphonaptera. [4] 62: 175-180, ill. **Ulmer, G.**—Key to the genera of Ephemerida. [Pekin Soc. Nat. Hist. Bul.] IV, (4), 1-18. ***Womersley, H.**—On the Apterygota collected in British Guiana by the Oxford University Expedition of 1929. [75] 6: 305-317, ill.

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tera. (S). [3] 577-608. **Talbot, G.**—A monograph of the Pierine genus Delias. Part 5: 220-259, col. pl.

DIPTERA. — Bangerter, H. — Mücken-Metamorphosen III. [56] 9: 97-102. **Borgmeier, T.**—Ueber das vorkommen der larven von Hermetia illucens (Stratiomyidae) in den nestern von Meliponiden. [34] 90: 225-235, ill. ***Cresson, E. T., Jr.**—Notes on and descriptions of some neotropical Neriidae and Micropezidae. [1] 56: 307-362. **Fulmek, L.**—Sciarinae (Mycetophiliden) als blattminierer. [89] Syst., 60: 46-48. ***Hendel, F.**—Die ausbeute der deutschen Chaco-Expedition 1925-1926. Diptera. Ephydridae. [56] 9: 127-155. ***Hull, F. M.**—Some notes and descriptions of Cerioidine wasp-waisted flies (Syrphidae). [5] 37: 178-181. ***Kröber, O.**—Neue Tabaniden und Zusätze zu bereits beschriebenen. (S). [34] 90: 69-86, ill. ***Malloch, J. R.**—Exotic Muscaridae. (S). [75] 6: 321-334, ill. **Nitzulescu, V.**—Sur le Phlebotomus troglodytes et le Phlebotomus brumpti. (S). [54] 8: 386-393, ill. ***Parent, M. O.**—Espèces nouvelles de Dolichopodides conservées au Muséum National d'Histoire Naturelle de Paris. (S). [An. Soc. Sci. Bruxel.], (B), 104: 86-115, ill. **Stear, J. R.**—Muscid larvae taken in "Sciara Army Worm". [5] 37: 175. ***Van Duzee, M. C.**—The Dolichopodid genus Nematoproctus in North America. [5] 37: 167-172.

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SPECIAL NOTICES.—Danmarks Fauna.—Biller VIII. (Haliplidae, Dytiscidae & Gyrinidae.). By V. Hansen. The descriptions and illustrations of the larvae in this work on Danish Coleoptera will probably be interesting to those studying these immature stages. 233pp., ill. **Die Tierwelt Deutchlands.**—Zweiflugler oder Diptera. IV. Syrphidae and Conopidae. By P. Sach and O. Krober. A valuable paper to students of these families. 142pp., ill.

Doings of Societies

THE ROCKY MOUNTAIN CONFERENCE OF ENTOMOLOGISTS.

The seventh annual meeting of The Rocky Mountain Conference of Entomologists was held in Pingree Park, August 18 to 23, 1930, inclusive. This again took the form of an informal meeting at the State Agricultural College Forestry Lodge in the mountains. Members of the families of a number of the entomologists joined in the occasion. A total of 52 were present. The following are those that were directly interested in entomology:

C. L. Marlatt and W. H. Larrimer, Washington, D. C.; C. P. Gillette, Carl A. Bjurman, Mrs. Esther Travis, Miss Miriam A. Palmer, John L. Hoerner, Sam C. McCampbell, Leslie B. Daniels, Geo. M. List, F. T. Cowan, C. R. Jones, R. G. Richmond and Bernard Travis, Fort Collins, Colorado; Bernard Liston and Rowan Potter, Wichita, Kansas; A. W. Lingquist, Manhattan, Kans.; John C. Hamlin, Geo. J. Reeves and I. M. Hawley, Salt Lake City, Utah; W. A. Shands and D. G. Rice, Grand Junction, Colorado; C. J. Drake and Tom A. Brindley, Ames, Iowa; J. H. Newton, Paonia, Colo.; A. P. Sturtevant and C. L. Corkins, Laramie, Wyoming; Leonard Haseman, Colombia, Missouri; Wilber G. Fish, Ithaca, New York, and Elwood H. Sheppard, Reading, Minnesota.

A total of ten sessions were held during the week for discussion and presentation of papers. The following is a list of the formal subjects discussed:

Orthoptera.—The Control Campaign Against the Mormon Cricket, F. T. Cowan.

Coleoptera.—The Rose Snout Beetle, J. L. Hoerner; The Potato Flea Beetle, L. B. Daniels; Alfalfa Weevil Population, J. C. Hamlin; Notes on the Alfalfa Weevil, I. M. Hawley.

Hymenoptera.—Food Habits of the Agricultural Ant, C. R. Jones.

Homoptera.—The Beet Leaf Hopper, W. A. Shands; Generic and Specific Characters of Aphids, M. A. Palmer.

Apiculture.—Work of the Intermountain Bee Station, A. P. Sturevant; Metabolism Studies of the Honey Bee, C. L. Corkins.

General.—Onion Insects of Iowa, C. J. Drake; Importance of Insect Physiology and Morphology, Leonard Haseman; The Work of the United States Bureau of Entomology, and the Mediterranean Fruit Fly Situation, C. L. Marlatt; New or Outstanding Insects of the Year, Leonard Haseman, J. H. Newton, C. J. Drake, G. I. Reeves, A. W. Lindquist, B. Liston, R. Potter, W. A. Shands, F. T. Cowan, S. C. McCampbell, C. P. Gillette; Early Notes on Colorado Insects, C. P. Gillette; Red Clover Pollinization, R. G. Richmond; Temperature and Humidity Control Boxes, T. A. Brindley; Cherry Insects of Northern Colorado, G. M. List; Some External Parasites of the Rodent Family, Sciuridae, in Colorado, S. C. McCampbell; Heat, Caramelization and Regranulation of Honey, R. G. Richmond.

Symposium.—Research in Entomology: Training for Research, C. P. Gillette; Organization for Research, C. L. Marlatt; Opportunities in Research, W. H. Larrimer; What is Wrong in Entomological Research, The Youngsters.

It was the unanimous opinion of those present that this type of meeting should be continued.

The officers elected for 1931 were C. P. Gillette, Chairman; George I. Reeves, Vice-Chairman; George M. List, Secretary; C. R. Jones, Treasurer. GEORGE M. LIST, *Secretary.*

CORRECTION.

ENT. NEWS, Vol. XLI, page 242, July, 1930. The author of the article credited to Orfila, R. N.—La primera exposición Entomológica Argentina efectuada en Buenos Aires del 19 al 25 de Septiembre de 1928, should have been given as **Dallas, E. T.**, and the correct reference is [104] *2*: 121-156.

EXCHANGES

This column is intended only for wants and exchanges, not for advertisements of goods for sale. Notices not exceeding three lines free to subscribers.

These notices are continued as long as our limited space will allow; the new ones are added at the end of the column, and only when necessary those at the top (being longest in) are discontinued.

Oxybelinae (Sphecidae, Hymenoptera)—Wanted from all parts of North and South America and West Indies. Will determine, exchange or purchase. V. S. L. Pate, Entomology Dept., Cornell University, Ithaca, N. Y.

Wanted—Names and addresses of collectors of insects, particularly Lepidoptera. Those from foreign countries especially invited. Will pay cash or exchange. Peter M. Casamento, P. O. Box 276, West New York, New Jersey.

Exchange—All groups of Lepidoptera in exchange for Noctuidae of the World. Foreign correspondence desired. A. Glenn Richards, Jr., Roberts Hall, Cornell Univ., Ithaca, N. Y., U. S. A.

Exchange—Lepidoptera of the Northwest for beautiful and showy exotics. C. W. Herr, Priest River, Idaho.

WANTED for cash or in exchange, hibernating pupae, especially Papilios, Saturniidae, Eacles imperialis, Autom. io and others from all parts of the States, Canada and Mexico. Send lists with best prices to Max Rothke, 1846 East Elm St., Scranton, Pa.

Mordellidae from all parts of the world wanted for special study. Will determine, exchange or purchase. Emil Liljeblad, 1018 Roscoe St., Chicago, Illinois.

Exchange—Will exchange California Butterflies for any of your locality. What have you to offer? Correspondence solicited. John Imschweiler, 748 N. Eucalyptus Ave., Inglewood, California.

Exchange—Oregon Lepidoptera for those of your locality. Kenneth M. Fender, 930 South Davis St., McMinnville, Oregon.

Exchange—Will exchange Montana Lepidoptera and Coleoptera for material of your locality. Correspondence solicited from all parts of the world. W. F. Lawrence, 2209 6th Ave. No., Great Falls, Montana.

Exchange—South American, also Java, Borneo, Celebes and Madagascar Butterflies in lots by 12.50 or 100 monthly arrivals. Wish for revisional study all North American PARNASSIUS and ARCTIIDAE also APANTESIS. Communicate with Mrs. Emma Kessler, 499 Manhattan Ave., New York City, N. Y.

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WANTED TO BUY or in exchange for Chinese insects. Proc. Ent. Soc. Philadelphia Vols. I-VI, Trans. Am. Ent. Soc. Vols. I-IV, Bull. Brooklyn Ent. Soc. Vols. I-V, Trans. Ent. Soc. London, 1st ser. Vols. I-V and Psyche Vols. I, XI, and XIII. G. P. Jung, Bureau of Entomology, Nanking, China.

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942.—**Cresson** (E. T., Jr.)—Studies in the dipterous family Ephydridae. III. (Trans., **56**, 93-131, 1930) ..... .75

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HYMENOPTERA

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LEPIDOPTERA

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